

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A data protection processing device comprising:
a determination unit which reads continuous digital data in sequence and determines whether or not the read digital data forms numerical values having a predetermined pattern; and
a calculation unit which adds predetermined calculation values to or subtracts predetermined calculation values from either all of or a portion of a predetermined number of items of digital data within a specified range and in a specified calculation pattern that ~~are~~ continuous follow after digital data that is determined as a result of the determination by the determination unit to form numerical values having the predetermined pattern.
2. (Currently Amended) The data protection processing device according to claim 1, wherein the calculation unit sequentially adds or subtracts calculation values of predetermined data patterns or byte patterns to or from digital data or ~~byte~~ data of a byte unit that is the object of the addition or subtraction.
3. (Currently Amended) The data protection processing device according to claim 1, further comprising:
a memory which stores information relating to ~~the~~ predetermined numerical values or ~~the~~ predetermined byte code, information relating to the predetermined number of items, and information relating to the predetermined calculation values; and
an information altering unit which alters at least one from among the information relating to the predetermined numerical values or the predetermined byte code, the information relating to the predetermined number of items, and the information relating to the predetermined calculation values that are stored in the memory.
4. (Currently Amended) A data protection processing device comprising:
a holding unit which temporarily holds binary data input serially as ~~byte~~ data of a byte unit;

a determination unit which sequentially reads the ~~byte~~ data of a byte unit from the holding unit and determines whether or not the read ~~byte~~ data of a byte unit forms a predetermined byte code;

a calculation unit which adds predetermined calculation values to or subtracts predetermined calculation values from either all of or a portion of a predetermined number of items of ~~byte~~ data of a byte unit within a specified range and in a specified calculation pattern that ~~are continuous~~ follow after ~~byte~~ data of a byte unit that is determined as a result of the determination by the determination unit to form the predetermined byte code; and

an output unit which serially outputs ~~byte~~ data of a byte unit calculated by the calculation unit as data of a bit unit.

5. (Currently Amended) The data protection processing device according to claim 4, wherein the calculation unit sequentially adds or subtracts calculation values of predetermined data patterns or byte patterns to or from digital data or ~~byte~~ data of a byte unit that is the object of the addition or subtraction.

6. (Currently Amended) The data protection processing device according to claim 4, further comprising:

a memory which stores information relating to ~~the~~ predetermined numerical values or ~~the~~ predetermined byte code, information relating to the predetermined number of items, and information relating to the predetermined calculation values; and

an information altering unit which alters at least one from among the information relating to the predetermined numerical values or the predetermined byte code, the information relating to the predetermined number of items, and the information relating to the predetermined calculation values that are stored in the memory.

7. (Currently Amended) A data protection processing device comprising:

a first determination unit which sequentially reads transmission data or received data forming continuous digital data and determines whether or not the read transmission data or received data contains digital data having a predetermined numerical value;

a first calculation unit which adds predetermined calculation values to or subtracts predetermined calculation values from either all of or a portion of a predetermined number of items of digital data within a specified range and in a specified calculation pattern that ~~are~~

~~continuous~~ follow after the digital data having the predetermined numerical value when it is determined by the first determination unit that the transmission data or received data contains digital data having a predetermined numerical value;

a second determination unit which sequentially reads transmission data or received data forming continuous digital data and determines whether or not the read transmission data or received data contains digital data having a predetermined numerical value; and

a second calculation unit which subtracts the predetermined calculation values from or adds the predetermined calculation values to either all of or a portion of a predetermined number of items of digital data that are continuous after the digital data having the predetermined numerical value when it is determined by the second determination unit that the transmission data or received data contains digital data having a predetermined numerical value.

8. (Currently Amended) The data protection processing device according to claim 7, wherein the first and second calculation units sequentially add or subtract calculation values of predetermined data patterns or byte patterns to or from digital data or ~~byte~~ data of a byte unit that is the object of the addition or subtraction.

9. (Currently Amended) The data protection processing device according to claim 7, further comprising:

a memory which stores information relating to ~~the~~ predetermined numerical values or ~~the~~ predetermined byte code, information relating to the predetermined number of items, and information relating to the predetermined calculation values; and

an information altering unit which alters at least one from among the information relating to the predetermined numerical values or the predetermined byte code, the information relating to the predetermined number of items, and the information relating to the predetermined calculation values that are stored in the memory.

10. (Currently Amended) A modem device comprising:

a data compression unit which performs data compression processing on digital data to be transmitted based on a normalized data compression standard;

a first determination unit which converts digital data that has undergone data compression processing by the data compression unit into ~~byte~~ data of a byte unit,

sequentially reads the converted ~~byte~~ data of a byte unit, and determines whether or not the read ~~byte~~ data of a byte unit forms a predetermined byte code;

a first calculation unit which adds predetermined calculation values to or subtracts predetermined calculation values from either all of or a portion of a predetermined number of items of ~~byte~~ data of a byte unit within a specified range and in a specified calculation pattern that ~~are continuous~~ follow after ~~byte~~ data of a byte unit that is determined as a result of the determination by the first determination unit to form the predetermined byte code;

a first output unit which outputs the ~~byte~~ data of a byte unit added or subtracted in the first calculation unit;

a second determination unit which converts received digital data into ~~byte~~ data of a byte unit, sequentially reads the converted ~~byte~~ data of a byte unit, and determines whether or not the read ~~byte~~ data of a byte unit forms a predetermined byte code;

a second calculation unit which adds the predetermined calculation values to or subtracts the predetermined calculation values from either all of or a portion of a predetermined number of items of ~~byte~~ data of a byte unit within a specified range and in a specified calculation pattern that ~~are continuous~~ follow after ~~byte~~ data of a byte unit that is determined as a result of the determination by the second determination unit to form the predetermined byte code; and

a data decompression unit which converts ~~byte~~ data of a byte unit subtracted or added in the second calculation unit into digital data and performs data decompression processing on the converted digital data based on the data decompression standard.

11. (Currently Amended) The modem device according to claim 10, wherein the first and second calculation units sequentially add or subtract calculation values of predetermined data patterns or byte patterns to or from digital data or ~~byte~~ data of a byte unit that is the object of the addition or subtraction.

12. (Currently Amended) The modem device according to claim 10, wherein the modem device further comprises:

a memory which stores information relating to ~~the~~ predetermined numerical values or ~~the~~ predetermined byte code, information relating to the predetermined number of items, and information relating to the predetermined calculation values; and

an information altering unit which alters at least one from among the information relating to the predetermined numerical values or the predetermined byte code, the information relating to the predetermined number of items, and the information relating to the predetermined calculation values that are stored in the memory.

13. (Currently Amended) A data communications system comprising:
- a data transmitting device; and
 - a data receiving device which receives data transmitted by the data transmitting device,
- wherein the data transmitting device includes
- a first determination unit which reads transmission data in sequence and determines whether or not the read data includes digital data having a predetermined numerical value;
 - a first calculation unit which adds predetermined calculation values to or subtracts predetermined calculation values from either all of or a portion of a predetermined number of items of digital data within a specified range and in a specified calculation pattern that ~~are continuous~~ follow after the digital data having the predetermined numerical value when it is determined by the first determination unit that the data contains digital data having a predetermined numerical value; and
 - a transmitting unit which transmits data that has undergone calculation processing by the first calculation unit, and
- wherein the data receiving device includes
- a receiving unit which receives data transmitted by the data transmitting unit;
 - a second determination unit which reads in sequence data received by the data receiving unit and determines whether or not the read data includes digital data having the predetermined numerical value; and
 - a second calculation unit which adds the predetermined calculation values to or subtracts the predetermined calculation values from either all of or a portion of the predetermined number of items of digital data within a specified range and in a specified calculation pattern that ~~are continuous~~ follow after the digital data having the predetermined numerical value when it is determined by the second determination unit that the data contains digital data having a predetermined numerical value.

14. (Currently Amended) The data communications system according to claim 13, wherein the data transmitting device and data receiving device are connected to each other via a network ~~such as the Internet~~.

15. (Currently Amended) The data communications system according to claim 13, wherein the first and second calculation units sequentially add or subtract calculation values of predetermined data patterns or byte patterns to or from digital data or ~~byte data~~ of a byte unit that is the object of the addition or subtraction.

16. (Currently Amended) The data communications system according to claim 13, wherein the data transmitting device and data receiving device further ~~comprising~~ comprises:

a memory which stores information relating to ~~the~~ predetermined numerical values or ~~the~~ predetermined byte code, information relating to the predetermined number of items, and information relating to the predetermined calculation values; and

an information altering unit which alters at least one from among the information relating to the predetermined numerical values or the predetermined byte code, the information relating to the predetermined number of items, and the information relating to the predetermined calculation values that are stored in the memory.

17. (Currently Amended) A data protection processing method comprising:
a reading step of reading in sequence continuous digital data;
a determination processing step of determining whether or not digital data read in the reading step forms numerical values having a predetermined pattern; and
a calculation processing step of adding predetermined calculation values to or subtracting predetermined calculation values from either all of or a portion of a predetermined number of items of digital data within a specified range and in a specified calculation pattern that ~~are continuous~~ follow after digital data that is determined as a result of the determination in the determination processing step to form numerical values having the predetermined pattern.

18. (Currently Amended) The data protection processing method according claim 17, wherein, in the calculation processing step, calculation values of predetermined data

patterns or byte patterns are sequentially added to or subtracted from digital data or ~~byte~~ data of a byte unit that is the object of the addition or subtraction.

19. (Currently Amended) The data protection processing method according to claim 17, further comprising an information altering step of altering at least one of information relating to ~~the~~ predetermined numerical values or ~~the~~ predetermined byte code, information relating to the predetermined number of items, and information relating to the predetermined calculation values.

20. (Currently Amended) A data protection processing method comprising:
a reading step of ~~converting~~ temporarily holding binary data input serially ~~into byte~~ as data of a byte unit and reading the ~~byte~~ data of a byte unit in sequence;
a determination processing step of determining whether or not the ~~byte~~ data of a byte unit read in the reading step forms a predetermined byte code;
a calculation processing step of adding predetermined calculation values to or subtracting predetermined calculation values from either all of or a portion of a predetermined number of items of ~~byte~~ data of a byte unit within a specified range and in a specified calculation pattern that ~~are continuous~~ follow after ~~byte~~ data of a byte unit that is determined as a result of the determination in the determination processing step to form the predetermined byte code; and
an output step of ~~converting byte~~ temporarily holding data of a byte unit calculated in the calculation processing step ~~into~~ as data of a bit unit and serially ~~outputs~~ outputting the ~~bit~~ data of a bit unit.

21. (Currently Amended) The data protection processing method according to claim 20, wherein, in the calculation processing step, calculation values of predetermined data patterns or byte patterns are sequentially added to or subtracted from digital data or ~~byte~~ data of a byte unit that is the object of the addition or subtraction.

22. (Currently Amended) The data protection processing method according to claim 20, further comprising an information altering step of altering at least one of information relating to ~~the~~ predetermined numerical values or ~~the~~ predetermined byte code,

information relating to the predetermined number of items, and information relating to the predetermined calculation values.

23. (Currently Amended) A data protection processing method comprising:
a holding step of ~~converting~~ temporarily holding binary data input serially ~~into byte as~~ data of a byte unit ~~and temporarily holding the converted byte data~~ in respective predetermined data frames;

a data extraction processing step of extracting a portion of the ~~byte data~~ of a byte unit forming the predetermined data frames held in the holding step to serve as data for processing;

a determination processing step of sequentially reading from the data extraction processing step the ~~byte data~~ of a byte unit forming the data for processing and determining whether or not the read ~~byte data~~ of a byte unit forms a predetermined byte code;

a calculation processing step of adding predetermined calculation values to or subtracting predetermined calculation values from either all of or a portion of a predetermined number of items of ~~byte data~~ of a byte unit within a specified range and in a specified calculation pattern that ~~are continuous~~ follow after ~~byte data~~ of a byte unit that is determined as a result of the determination in the determination processing step to form the predetermined byte code;

a data frame reconstruction processing step of reconstructing the predetermined data frames using ~~byte data~~ of a byte unit calculated in the calculation processing step; and

an output step of ~~converting the data frames reconstructed in the data frame reconstruction~~ temporarily holding data of a byte unit calculated in the calculation processing step ~~into as~~ data of a bit unit and serially outputting the ~~bit data~~ of a bit unit.

24. (Currently Amended) The data protection processing method according to claim 23, wherein, in the calculation processing step, calculation values of predetermined data patterns or byte patterns are sequentially added to or subtracted from digital data or ~~byte data~~ of a byte unit that is the object of the addition or subtraction.

25. (Currently Amended) The data protection processing method according to claim 23, further comprising an information altering step of altering at least one of information relating to the predetermined numerical values or the predetermined byte code,

information relating to the predetermined number of items, and information relating to the predetermined calculation values.

26. (Currently Amended) A data protection processing method comprising:
- a reading step of sequentially reading transmission data or received data forming continuous digital data;
 - a first determination processing step of determining whether or not the transmission data or received data read in the reading step contains digital data having a predetermined numerical value;
 - a first calculation processing step of adding predetermined calculation values to or subtracting predetermined calculation values from either all of or a portion of a predetermined number of items of digital data of a byte unit within a specified range and in a specified calculation pattern that ~~are continuous~~ follow after the digital data having the predetermined numerical value when it is determined in the first determination processing step that the transmission data or received data contains digital data having a predetermined numerical value;
 - a second determination processing step of sequentially reading received data or transmission data forming continuous digital data and determining whether or not the read received data or transmission data contains digital data having a predetermined numerical value; and
 - a second calculation processing step of adding predetermined calculation values to or subtracting predetermined calculation values from either all of or a portion of a predetermined number of items of digital data of a byte unit within a specified range and in a specified calculation pattern that ~~are continuous~~ follow after the digital data having the predetermined numerical value when it is determined in the second determination processing step that the received data or transmission data contains digital data having a predetermined numerical value.

27. (Currently Amended) The data protection processing method according to claim 26, wherein, in the first and second calculation processing steps, calculation values of predetermined data patterns or byte patterns are sequentially added to or subtracted from digital data or ~~byte data~~ of a byte unit that is the object of the addition or subtraction.

28. (Currently Amended) The data protection processing method according to claim 26, further comprising an information altering step of altering at least one of information relating to ~~the~~ predetermined numerical values or ~~the~~ predetermined byte code, information relating to the predetermined number of items, and information relating to the predetermined calculation values.

29. (Currently Amended) A data protection processing method comprising:
a first reading step of ~~converting~~ temporarily holding transmission data or received data in the form of serially input binary data ~~into byte~~ as data of a byte unit and sequentially reading the ~~byte data~~ of a byte unit;

a first determination processing step of determining whether or not the ~~byte data~~ of a byte unit read in the first reading step forms a predetermined byte code;

a first calculation processing step of adding predetermined calculation values to or subtracting predetermined calculation values from either all of or a portion of a predetermined number of items of ~~byte data~~ of a byte unit within a specified range and in a specified calculation pattern that ~~are continuous~~ follow after ~~byte data~~ of a byte unit that is determined as a result of the determination in the first determination processing step to form the predetermined byte code;

a first output step of ~~converting byte~~ temporarily holding data of a byte unit added or subtracted in the first calculation processing step ~~into~~ as data of a bit unit and serially outputting the ~~bit data as transmission data or received data~~ of a bit unit;

a second reading step of ~~converting~~ temporarily holding received data or transmission data in the form of serially input binary data ~~into byte~~ as data of a byte unit and sequentially reading the ~~byte data~~ of a byte unit;

a second determination processing step of determining whether or not the ~~byte data~~ of a byte unit read in the second reading step forms the predetermined byte code;

a second calculation processing step of adding the predetermined calculation values to or subtracting the predetermined calculation values from either all of or a portion of a predetermined number of items of ~~byte data~~ of a byte unit within a specified range and in a specified calculation pattern that ~~are continuous~~ follow after ~~byte data~~ of a byte unit that is determined as a result of the determination in the second determination processing step to form the predetermined byte code; and

a second output step of ~~converting byte~~ temporarily holding data of a byte unit added or subtracted in the second calculation processing step ~~into as~~ data of a bit unit and serially outputting the ~~bit data as received data or transmission data~~ of a bit unit.

30. (Currently Amended) The data protection processing method according to claim 29, wherein, in the first and second calculation processing steps, calculation values of predetermined data patterns or byte patterns are sequentially added to or subtracted from digital data or ~~byte data~~ of a byte unit that is the object of the addition or subtraction.

31. (Currently Amended) The data protection processing method according to claim 29, further comprising an information altering step of altering at least one of information relating to ~~the~~ predetermined numerical values or ~~the~~ predetermined byte code, information relating to the predetermined number of items, and information relating to the predetermined calculation values.

32. (Currently Amended) A data protection processing method comprising:
a first holding step of ~~converting~~ temporarily holding transmission data or received data in the form of serially input binary data ~~into byte~~ as data of a byte unit ~~and temporarily holding the converted byte data~~ in respective predetermined data frames;

a first data extraction processing step of extracting from the first holding step a portion of the ~~byte data~~ of a byte unit forming the predetermined data frames to serve as data for processing;

a first determination processing step of sequentially reading from the first data extraction processing step the ~~byte data~~ of a byte unit forming the data for processing and determining whether or not the read ~~byte data~~ of a byte unit forms a predetermined byte code;

a first calculation processing step of adding predetermined calculation values to or subtracting predetermined calculation values from either all of or a portion of a predetermined number of items of ~~byte data~~ of a byte unit within a specified range and in a specified calculation pattern that ~~are continuous~~ follow after ~~byte data~~ of a byte unit that is determined as a result of the determination in the first determination processing step to form the predetermined byte code;

a first data frame reconstruction processing step of reconstructing the predetermined data frames using ~~byte data~~ of a byte unit calculated in the first calculation processing step;

a first output step of ~~converting temporarily holding~~ the data frames reconstructed in the first data frame reconstruction processing step ~~into~~ as data of a bit unit and serially outputting the ~~bit~~ data of a bit unit as transmission data or received data;

a second holding step of ~~converting temporarily holding~~ received data or transmission data in the form of serially input binary data ~~into~~ byte as data of a byte unit and ~~temporarily holding the converted byte data~~ in respective predetermined data frames;

a second data extraction processing step of extracting from the second holding step a portion of the ~~byte~~ data of a byte unit forming the predetermined data frames to serve as data for processing;

a second determination processing step of sequentially reading from the second data extraction processing step the ~~byte~~ data of a byte unit forming the data for processing and determining whether or not the read ~~byte~~ data of a byte unit forms a predetermined byte code;

a second calculation processing step of adding the predetermined calculation values to or subtracting the predetermined calculation values from either all of or a portion of a predetermined number of items of ~~byte~~ data of a byte unit within a specified range and in a specified calculation pattern that ~~are continuous follow~~ after ~~byte~~ data of a byte unit that is determined as a result of the determination in the second determination processing step to form the predetermined byte code;

a second data frame reconstruction processing step of reconstructing the predetermined data frames using ~~byte~~ data of a byte unit subtracted or added in the second calculation processing step; and

a second output step of ~~converting temporarily holding~~ the data frames reconstructed in the second data frame reconstruction processing step ~~into~~ as data of a bit unit and serially outputting the ~~bit~~ data of a bit unit as received data or transmission data.

33. (Currently Amended) The data protection processing method according to claim 32, wherein, in the first and second calculation processing steps, calculation values of predetermined data patterns or byte patterns are sequentially added to or subtracted from digital data or ~~byte~~ data of a byte unit that is the object of the addition or subtraction.

34. (Currently Amended) The data protection processing method according to claim 32, further comprising an information altering step of altering at least one of information relating to the predetermined numerical values or ~~the~~ predetermined byte code;

information relating to the predetermined number of items, and information relating to the predetermined calculation values.